

# HASP TEMPLATE

UNITED STATES DEPARTMENT OF AGRICULTURAL  
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

## **HASP Section 9 Decontamination Procedures**

### **Introduction**

The decontamination procedures are designed to achieve an orderly, controlled removal or neutralization of contaminants that may accumulate on personnel or equipment. These procedures minimize employee contact with contaminants and protect against the transfer of contaminants to clean areas of the site and off-site. They also extend the useful life of PPE by reducing the amount of time that contaminants contact and can permeate PPE surfaces.

Decontamination procedures are necessary to protect field personnel and control the spread of contamination by either personnel or equipment. Personnel participating in the field activities may potentially become contaminated in a number of ways, including:

- Contact with vapors, gases, mists, or particulates in the air
- Being splashed by materials while sampling (this includes infected animal secretions or blood)
- Walking on or touching contaminated soil, objects, surfaces, water or other materials

The level of decontamination is prescribed by the situation. An example would be in an outbreak situation. During the investigation phase of a deployment, decontamination may consist of spraying disinfectant on shoes and on vehicle tires. Once an biological agent is discovered and containment measures are used, decontamination procedure would be expanded to a de-con line when leaving the contaminated area. This de-con line may include applying disinfectant, removing PPE, and washing before leaving the areas.

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## **Contamination Prevention**

### **Personnel Prevention**

One of the most important aspects of decontamination is the prevention of contamination. Good contamination prevention should minimize worker exposure and help ensure valid sample results by preventing cross-contamination.

Procedures for contamination avoidance include:

1. Do not walk through areas of obvious or known contamination.
2. Do not handle or touch contaminated materials directly.
3. Make sure all personal protective equipment has no cuts or tears prior to donning.
4. Fasten all closures on suits, covering with tape, if necessary.
5. Particular care should be taken to protect any skin injuries.
6. Stay upwind of airborne contaminants
7. Do not carry cigarettes, gum, food, drink, etc. into contaminated areas.

### **Equipment and Samples Prevention**

Precautions to minimize contaminating equipment would be similar to those for personnel. These precautions would include:

- Take care to limit the amount of contamination that comes into contact with heavy equipment and vehicles.
- If contaminated tools are to be placed on non-contaminated equipment/vehicles for transport to the decontamination pad, use plastic to keep the equipment/vehicles clean.

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If samples must be taken from a site, bag sample containers prior to emplacement of sample material.

### **Specific Decontamination Procedures**

#### **General**

As stated earlier, the specific situation and contaminants will dictate the decontaminating procedure. Below are general decontamination procedures based on the PPE level being utilized. Procedures for specific situations include:

Assessment/Investigation: If APHIS personnel are traveling from wild or commercial sites to assess/investigate possible disease situations, disinfectant should be sprayed on the vehicle and shoes of the investigators before proceeding to the next site. This can be accomplished by use of gloves and a spray bottle.

WMD- In a Weapons of Mass Destruction incident involving APHIS, decontamination procedures will be set by the Command Staff. The APHIS Safety Officer will work with the Incident Safety Officer (or designee) to assure decontamination procedures are being adhered to.

**Decontamination Area** - A decontamination area must be set up before any personnel or equipment may enter areas where the potential for exposure to hazardous substances exist. Decon area guidelines include:

- a. establishment within the Warm Zone perimeter, adjacent to the Entrance/Exit and it should be at a safe distance from the contamination source.

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- b. Personnel, equipment and apparatus shall not be permitted to leave the Hot Zone without approval from the Decontamination Group
- c. The decontamination area should provide a corridor leading away from the source of contamination toward the exit, with stations along the way for the deposit of tools, equipment, protective clothing and other items.
- d. Monitoring personnel and equipment should be appropriately placed along the path. A person traveling along the path should experience a decreasing level of contamination along the way.
- e. When showers or spray nozzles are used, adequate space must be provided to avoid contamination of other areas or persons.
- f. All contaminated items must remain within the perimeter of the Hot Zone until decontaminated or safely packaged for removal.

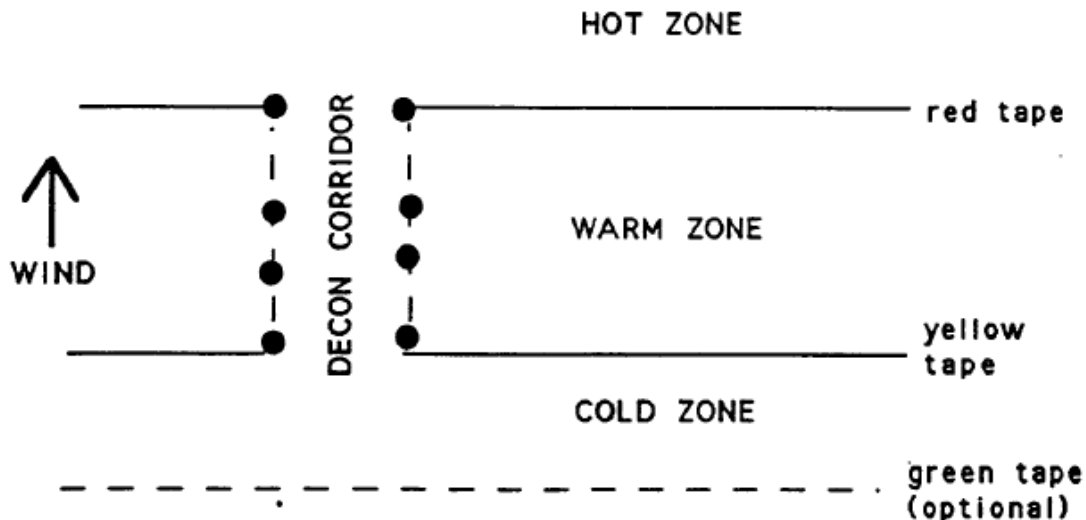
During the decontamination process all personnel working in the decontamination area must be adequately protected from contaminants.

Decontamination area precautions include:

- a. The Safety Officer will identify and require the appropriate protective equipment to be used.
- b. The Decontamination Group is required to decontaminate themselves and their equipment at the end of the incident.
- c. Any runoff or residue from decontamination procedures should be contained within the perimeter of the Warm Zone and retained for proper disposal.
- d. Contaminated run-off should not be allowed to spread or escape. Diking may be necessary and should be directed back to the Hot Zone. Decon rinseate should be collected for proper disposal, and not allowed to run over the ground to the hot zone.

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## Specific PPE Level Decontamination

### Level D Decontamination (Normal or Modified)

Level D PPE consists of normal work attire, clothing that will provide protection from physical work and thermal conditions. Modified Level D is used to refer to conditions where an additional level of dermal protection is needed. This includes clothes and boot coverings.

When full decontamination is necessary, it will consist of the following:

A decontamination station will be located at the "hotline" (the edge of the exclusion zone) in the "decon area" of the contamination reduction zone (also referred to as the warm zone) where personnel routinely enter or exit the exclusion zone. When exiting the exclusion zone, personnel will doff overboots, chemical-resistant boots, coveralls, and outer gloves only at the specified decontamination station.

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The decon area must be arranged in such a way so as not to contaminate the ground under and surrounding the area. Use of pools, pads, tarps and other such coverings can aid in this effort.

All doffed reusable PPE removed will remain at the decontamination station pending personnel redonning the reusable PPE. At the conclusion of work in the exclusion zone, all disposable and reusable PPE, will be placed in separate plastic bags before disposal or transfer offsite.

Personnel will not be permitted to exit the "decon area" until contaminated clothing and equipment are removed and they have washed their hands and face with soap and water.

Partial decontamination that will always be required when exiting the exclusion zone will include an equipment drop (hard hats, tools, samples, etc.) in the "decon area" of the contamination reduction zone on plastic labeled "EQUIP" and a glove and boot wash/rinse at the "hotline" of the "decon area."

Gloves and boots will be scrubbed as needed while sprayed with disinfectant solution and a clean water rinse while standing in appropriate tubs.

In those situations where disposable outer garments cover boots and gloves, wash/rinse procedures may not be necessary, as determined by the Operation Section Chief.

All disposable outer garments should be discarded in appropriately labeled plastic bags before disposal or transfer.

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## Level C Decontamination

Decontamination will include the following:

A decontamination station will be located at the hotline in the decon area of the contamination reduction zone where personnel routinely enter or exit the exclusion zone.

When exiting the exclusion zone, personnel will doff overboots (if used), chemical-resistant boots, coveralls, and outer gloves only at the specified decon station. Air purifying respirators will be removed last.

Personnel will be instructed in proper decontamination techniques. This will entail removal of protective clothing in an "inside out" manner.

Removal of contaminants from clothing or equipment by blowing, shaking, or any other means that may disperse material into the air will be prohibited.

All personal protective clothing removed will remain at the decontamination station pending personnel redonning the clothing.

At the conclusion of work in an exclusion zone, all PPE will be placed in plastic bags before disposal or transfer.

Personnel will not be permitted to exit the contamination reduction zone until contaminated clothing and equipment have been removed and they have washed their hands with soap and water.

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## **9.4 Level A and B Decontamination**

Requirements for decontamination of Level A and Level B PPE will be addressed in the Work plan, if necessary.

## **9.5 Other Decontamination/Disposal Procedures**

Decontamination procedures for respirators and equipment are briefly described below. All decontamination will be performed in an area that is removed from the locations that are sampled.

Decontamination waters will be collected in 55-gallon drums marked "decon fluids" or similar containers.

Equipment decontamination will be conducted on a concrete pad or plastic sheeting constructed so decontamination waters can be collected and drummed. Decon fluids will be disposed of properly.

## **9.6 Respirator Decontamination Procedures**

Respirators will be cleaned with soap and water after each day of use, and when personnel change work.

Clean water will be available for such purposes.

After washing, each respirator will be disinfected by wiping both the inside and outside with isopropyl alcohol.

The cleaned respirators will be stored in clean plastic bags.

## **9.7 Reusable Equipment Decontamination**

Items such as boots, goggles, and hard hats are considered reusable. These items will be decontaminated by washing them with a detergent such as Alconox



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and/or disinfectant, then rinsing thoroughly and either air drying or wiping them down with paper towels.

Reusable equipment used for sampling (hand augers, stainless steel bowls and spoons, etc.) will be either steam cleaned or cleaned with a disinfecting agent.

### **9.8 Disposable Equipment**

Disposable coveralls, nitrile rubber gloves, disposable sampling materials, unusable safety equipment (used respirator cartridges, punctured disposable boots, etc.), and other materials, such as bags and paper towels, must be discarded in such a way that they cannot be reused.

All items will be double-bagged in heavy plastic garbage bags; the bags will be sealed and then disposed of in a dumpster as part of the facility municipal solid waste stream.

The Tyvek<sup>®</sup> coveralls and nitrile rubber gloves will be disposed of at least daily and more frequently if they are torn or grossly contaminated.

### **9.9 Heavy Equipment**

A steam cleaner will be utilized to decontaminate all heavy equipment, trucks, and tools. If it is deemed necessary by subject matter experts, disinfectant may also need to be applied.

Personnel should exercise caution when using a steam cleaner. The high-pressure steam can cause severe burns and skin lesions.

Protective gloves, splash glasses, hearing protection, hard hats, steel-toed boots, and polycoated Tyvek<sup>®</sup> suits or rain gear will be worn when using steam cleaners.

All water and solvents from the decontamination process will be captured and containerized in separate 55-gallon drums labeled with the type of "decon fluids" for proper future disposal.

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### **9.10 Personal Hygiene**

No smoking, eating, drinking, chewing gum or tobacco, taking medication, or applying cosmetics will take place within the contaminated area.

These activities are restricted to the clean area and can be conducted only after the workers have washed face, hands, and forearms in the decon area.

In addition, at the end of each day, after protective equipment is removed, each person will wash face, hands, and forearms before leaving.

### **9.11 Monitoring the Effectiveness of Decontamination**

Visual examination and sampling are used to evaluate the effectiveness of decontamination procedures, in compliance with 29 CFR 1910.120(k)(2)(iv).

Visual examination is used to ensure that procedures are implemented as described and that they appear to control the spread of contaminants under changing site conditions. Visual examination is also used to inspect for signs of residual contamination or for contaminant permeation of PPE.

Sampling, both air sampling and surface sampling, are used to verify the effectiveness of decontamination. Air samples are taken in the clean zone to ensure that airborne contaminants have not spread to clean areas of the site. Surface samples are taken from the inside surfaces of PPE, from decontaminated heavy equipment, and from surfaces within clean areas of the site to ensure that site decontamination and control procedures are performing as anticipated. The type and frequency of air and surface sampling used to ensure the effectiveness of decontamination procedures are determined by the Incident Safety Officer (see HASP Section 7- Monitoring), based on the contaminate, the concentrations and the sampling methods available. If site procedures are changed as a result of inspection and monitoring, all affected

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employees are notified of these changes.

As an example, the Commonwealth of Massachusetts', Department of Fire Services Decontamination Standard Operating Guideline is provided in Appendix 9-A.